



**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/227,242    01/08/99    MISZCZAK    E    8613

IM62/0605

MARK W. ORCLL  
ILLINOIS TOOL WORKS  
3600 WEST LAKE AVENUE  
GLENVIEW IL 60025

EXAMINER

E\_LVE.M

ART UNIT	PAPER NUMBER
----------	--------------

1725

DATE MAILED: 06/05/00

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No.

04/227,242

Applicant(s)

Miszczak et al.

Examiner

M. A. ELVE

Group Art Unit

1725

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_.
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

### Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_.

### Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 1725

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagarajan et al. (US Pat. 5,824,992) in view of James et al. (US Pat. 5,192,851) and Crockett et al. (US Pat. 5,365,036).

Nagarajan et al. discloses a metal core wire with a steel sheath. The core composition is between 0.001-12 wt% of the total metal core wire. Additionally, the core contains iron powder (abstract). The oxygen content of the metal-core wire weld deposits are affected by the shielding gas. The total metal core wire compositions contain the following approximate ranges, C (0.005-0.15 wt%), Mn (1.0-4.0 wt%) and Si (0.3-2.5 wt%) by total weight of the wire. The steel sheath contains the following approximate ranges, Mn (0.1-1.1 wt%), C(0.005-0.15 wt%), Ti, B, and the balance Fe. The metal core contains approximately C(0.005-0.030 wt%), Mn (0.5-2.5 wt%), Si (0.2-1.2 wt%), Ti (0.001-0.100 wt%), Fe (0.1-10.0 wt%) which yields the following combined compositions: Fe-Mn (0.6-12.5 wt%), Fe-Si (0.3-13.2 wt%), and Fe-Ti (0.101-10.1 wt%).

Analysis of the final weld deposit yields the presence of nitrogen (col. 2, lines 4-6; col. 4, lines 1-

Art Unit: 1725

65; col. 5, lines 1-65; col. 6, lines 1-65; col.7, lines 1-65 & col. 8, lines 1-45) . Nagarajan et al. does not teach the presence of aluminum and silicon in the steel sheath, the composition of the shielding gas, the exact core weight percent of the total wire or fume reduction.

James et al. discloses an electrode wire for electric arc welding. The core contains Mn, Si and the remainder of the core contains fused mixed oxide, desired alloying components and iron powder (abstract). The oxides contain  $\text{Al}_2\text{O}_3$ . The proportion of the core is 15 to 28 wt% of the total wire. Shielding gas is an argon-carbon dioxide mixture containing 2 to 25 %  $\text{CO}_2$ . (Col. 1, lines 65-66; col. 2, lines 13-17) It would have been obvious to one of ordinary skill in the art at the time of the invention to use the Si and Al and core composition as disclosed by James et al. in the Nagarajan et al. welding electrode because of strength enhancement due to the presence of aluminum and silicon.

Crockett et al. discloses a gas shielded electrode. The wire has a ferrous sheath and the core contains aluminum, titanium, carbon, manganese and silicon. The presence of aluminum reduces the fume amounts during welding. Solid wire welding had reduced fume generation with the presence of aluminum (abstract & col. 3, lines 25-50). It would have been obvious to one of ordinary skill in the art at the time of the invention to measure fume generation as taught by Crockett et al. for the Nagarajan et al. wire because it would characterize the welding wire and deposit more completely.

If the range of the prior art and claimed range do not overlap, obviousness still exists if the ranges are close enough that one would not expect a difference in properties. In re Woodruff 16

Art Unit: 1725

USPQ 2d 1934; Titanium Metals Corp. v. Banner 227 USP 773 (Fed. Cir. 1985); In re Aller 105 USPQ 233. Furthermore, the selection of reaction parameters, such as gaseous environments, would have been obvious. It is well settled that where patentability is predicated upon a change in a condition of prior art process, such as gaseous environments (argon and carbon dioxide concentrations), the change must be at least "critical", that is, it must lead to a new and unexpected result. The applicant has the burden of providing such proof of criticality. In re Aller 105 USPQ 233, 255 (CCPA 1955).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bushey et al. (US Pat. 5,095,191); Keegan et al. (US Pat. 5,857,141).

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Alexandra Elve whose telephone number is (703) 308-0092. The examiner can normally be reached Monday to Friday from 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan, can be reached on (703) 308-2383. The fax number for the group is (703) 872-9386.

Application/Control Number: 09/227,242

Page 5

Art Unit: 1725

Any inquiry of general nature to the status of this application or proceeding should be directed to the group receptionist whose telephone number is (703) 308-0661.

*M. Alexandra Elve*  
M. Alexandra Elve  
Patent Examiner  
Technology Center 1700

May 31, 2000